



1

SEQUENCE LISTING

<110> Monia, Brett P

<120> Antisense Oligonucleotide Modulation of raf Gene Expression

<130> ISPH-0625

<140> US 10/057,550

<141> 2001-01-25

<150> US 09/506,073

<151> 2000-02-18

<150> US 09/143,214

<151> 1998-08-28

<150> US 08/756,806

<151> 1996-11-26

<150> PCT/US95/07111

<151> 1995-05-31

<150> US 08/250,856

<151> 1994-05-31

<160> 108

<170> PatentIn version 3.1

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 1

tgaaggtgag ctggagccat

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 2

gctccattga tgcagcttaa

20

<210> 3

<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3
ccctgtatgt gctccattga

20

<210> 4
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4
ggtgcaaagt caactagaag

20

<210> 5
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5
attcttaaac ctgagggagc

20

<210> 6
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6
gatgcagctt aaacaattct

20

<210> 7
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 7
cagcactgca aatggcttcc

20

<210> 8
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 8
 tcccgctgt gacatgcatt 20

<210> 9
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 9
 gccgagtgcc ttgcctggaa 20

<210> 10
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 10
 agagatgcag ctggagccat 20

<210> 11
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 11
 aggtgaaggc ctggagccat 20

<210> 12
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic

<400> 12

gtctggcgct gcaccactct

20

<210> 13

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 13

ctgatttcca aaatcccatg

20

<210> 14

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 14

ctgggctggt tggcctta

20

<210> 15

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 15

tcagggtgg actgcctgct

20

<210> 16

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 16

ggtgaggag cgggaggcgg

20

<210> 17

<211> 20

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 17
 cgctcctcct ccccgcggcg 20

<210> 18
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 18
 ttcggcggca gcttctcgcc 20

<210> 19
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 19
 gccgccccaa cgtcctgtcg 20

<210> 20
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 20
 tcctcctccc cgcggcgggt 20

<210> 21
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 21
 ctgcgccgct cctcctcccc 20

<210> 22
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 22
 ctggcttctc ctctcccct 20

<210> 23
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 23
 cgggaggcgg tcacattcgg 20

<210> 24
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 24
 tctggcgctg caccactctc 20

<210> 25
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 25
 ttctcgcccg ctctcctcc 20

<210> 26
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic

<400> 26

ttctcctcct cccctggcag

20

<210> 27

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 27

cctgctggct tctcctcctc

20

<210> 28

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 28

gtcaagatgg gctgaggtgg

20

<210> 29

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 29

ccatcccgga cagtcaccac

20

<210> 30

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 30

atgagctcct cgccatccag

20

<210> 31

<211> 20

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 31
 aatgctggtg gaacttgtag 20

<210> 32
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 32
 ccggtacccc aggttcttca 20

<210> 33
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 33
 ctgggcagtc tgccgggcca 20

<210> 34
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 34
 cacctcagct gccatccaca 20

<210> 35
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 35
 gagattttgc tgagggtccgg 20

<210> 36
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 36
 gcactccgct caatcttggg

20

<210> 37
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 37
 ctaaggcaca aggcgggctg

20

<210> 38
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 38
 acgaacattg attggctggt

20

<210> 39
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 39
 gtatccccaa agccaagagg

20

<210> 40
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic

<400> 40

catcagggca gagacgaaca

20

<210> 41

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 41

ggaacatctg gaatttggtc

20

<210> 42

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 42

gattcactgt gacttcgaat

20

<210> 43

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 43

gcttccattt ccagggcagg

20

<210> 44

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 44

aagaaggcaa tatgaagtta

20

<210> 45

<211> 20

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 45
 gtggtgcctg ctgactcttc 20

<210> 46
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 46
 ctggtggcct aagaacagct 20

<210> 47
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 47
 gtatgtgctc cattgatgca 20

<210> 48
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 48
 tccctgtatg tgctccattg 20

<210> 49
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 49
 atacttatac ctgagggagc 20

<210> 50
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 50
atgcattctg cccccaagga 20

<210> 51
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 51
gacttgata cctctggagc 20

<210> 52
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 52
actggcactg caccactgtc 20

<210> 53
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 53
aagttctgta gtaccaaagc 20

<210> 54
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 54

ctcctggaag acagattcag

20

<210> 55

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 55

ttgagcatgg ggaatgtggg

20

<210> 56

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 56

aacatcaaca tccacttgcg

20

<210> 57

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 57

tgtagccaac agctggggct

20

<210> 58

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 58

ctgagagggc tgagatgcgg

20

<210> 59

<211> 20

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 59
 gctcctggaa gacaaaattc 20

<210> 60
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 60
 tgtgactaga gaaacaaggc 20

<210> 61
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 61
 caagaaaacc tgtattcctg 20

<210> 62
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 62
 ttgtcaggcg caataaaaac 20

<210> 63
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 63
 ttaaaataac ataattgagg 20

<210> 64
 <211> 2977
 <212> DNA
 <213> Homo sapiens

<400> 64
 ccgaatgtga ccgcctcccg ctccctcacc cgccgcgggg aggaggagcg ggcgagaagc 60
 tgccgccgaa cgacaggacg ttggggcggc ctggctccct caggtttaag aattgtttaa 120
 gctgcatcaa tggagcacat acagggagct tggaagacga tcagcaatgg ttttggttc 180
 aaagatgccg tgtttgatgg ctccagctgc atctctccta caatagttca gcagtttggc 240
 tatcagcgcc gggcatcaga tgatggcaaa ctacacagatc cttctaagac aagcaacact 300
 atccgtgttt tcttgccgaa caagcaaaga acagtgggtca atgtgcgaaa tggaatgagc 360
 ttgcatgact gccttatgaa agcactcaag gtgagggggc tgcaaccaga gtgctgtgca 420
 gtgttcagac ttctccacga acacaaaggt aaaaaagcac gcttagattg gaatactgat 480
 gctgcgtctt tgattggaga agaacttcaa gtagatttcc tggatcatgt tcccctcaca 540
 acacacaact ttgctcggaa gacgttcctg aagcttgccct tctgtgacat ctgtcagaaa 600
 ttctgctca atggatttcg atgtcagact tgtggctaca aatttcatga gcactgtagc 660
 accaaagtac ctactatgtg tgtggactgg agtaacatca gacaactctt attgtttcca 720
 aattccacta ttggtgatag tggagtccca gcactacctt ctttgactat gcgtcgtatg 780
 cgagagtctg tttccaggat gcctgttagt tctcagcaca gatattctac acctcacgcc 840
 ttcaccttta acacctccag tccctcatct gaagggtccc tctcccagag gcagaggctg 900
 acatccacac ctaatgtcca catggtcagc accacgctgc ctgtggacag caggatgatt 960
 gaggatgcaa ttcgaagtca cagcgaatca gcctcacctt cagccctgtc cagtagcccc 1020
 aacaatctga gccaacagg ctggtcacag ccgaaaaccc ccgtgccagc acaaagagag 1080
 cgggcaccag tatctgggac ccaggagaaa aacaaaatta ggcctcgtgg acagagagat 1140
 tcaagctatt attgggaaat agaagccagt gaagtgatgc tgtccactcg gattgggtca 1200
 ggctcttttg gaactgttta taagggtaaa tggcacggag atgttgagcgt aaagatccta 1260
 aaggttgtcg acccaacccc agagcaatcc caggccttca ggaatgaggt ggctgttctg 1320
 cgcaaaacac ggcattgtgaa cattctgctt ttcattgggtt acatgacaaa ggacaacctg 1380
 gcaattgtga cccagtgggtg cgagggcagc agcctctaca aacacctgca tgtccaggag 1440

accaagtttc	agatgttcca	gctaattgac	attgcccggc	agacgggtca	gggaatggac	1500
tatttgcacg	caaagaacat	catccataga	gacatgaaat	ccaacaatat	atttctccat	1560
gaaggcttaa	cagtgaaaat	tggagatttt	ggtttggcaa	cagtaaagtc	acgctggagt	1620
ggttctcagc	aggttgaaca	acctactggc	tctgtcctct	ggatggcccc	agaggtgac	1680
cgaatgcagg	ataacaaccc	attcagtttc	cagtcggatg	tctactccta	tggcatcgta	1740
ttgtatgaac	tgatgacggg	ggagcttctt	tattctcaca	tcaacaaccg	agatcagatc	1800
atcttcatgg	tgggccgagg	atatgcctcc	ccagatctta	gtaagctata	taagaactgc	1860
cccaaagcaa	tgaagaggct	ggtagctgac	tgtgtgaaga	aagtaaagga	agagaggcct	1920
ctttttcccc	agatcctgtc	ttccattgag	ctgctccaac	actctctacc	gaagatcaac	1980
cggagcgctt	ccgagccatc	cttgcacggg	gcagcccaca	ctgaggatat	caatgcttgc	2040
acgctgacca	cgtccccgag	gctgcctgtc	ttctagttga	ctttgcacct	gtcttcaggc	2100
tgccagggga	ggaggagaag	ccagcaggca	ccacttttct	gtcccttttc	tccagaggca	2160
gaacacatgt	tttcagagaa	gctctgctaa	ggaccttcta	gactgctcac	agggccttaa	2220
cttcatgttg	ccttcttttc	tatccctttg	ggccctggga	gaaggaagcc	atttgacgtg	2280
ctggtgtgtc	ctgctccctc	cccacattcc	ccatgctcaa	ggcccagcct	tctgtagatg	2340
cgcaagtgga	tgttgatggg	agtacaaaaa	gcagggggccc	agccccagct	gttggctaca	2400
tgagtattta	gaggaagtaa	ggtagcaggc	agtcagccc	tgatgtggag	acacatggga	2460
ttttggaaat	cagcttctgg	aggaatgcat	gtcacaggcg	ggactttctt	cagagagtgg	2520
tgcagcgcca	gacattttgc	acataaggca	ccaaacagcc	caggactgcc	gagactctgg	2580
ccgcccgaag	gagcctgctt	tggtactatg	gaacttttct	taggggacac	gtcctccttt	2640
cacagcttct	aaggtgtcca	gtgcattggg	atggttttcc	aggcaaggca	ctcggccaat	2700
ccgcatctca	gccctctcag	gagcagtctt	ccatcatgct	gaattttgtc	ctccaggagc	2760
tgcccctatg	gggcggggccg	cagggccagc	ctgtttctct	aacaaacaaa	caaacaaaca	2820
gccttgtttc	tctagtcaca	tcatgtgtat	acaaggaagc	caggaataca	ggttttcttg	2880
atgatttggg	ttttaatttt	gtttttattg	cacctgacaa	aatacagtta	tctgatggtc	2940
cctcaattat	gttattttta	taaaataaat	taaattt			2977

<210> 65
 <211> 2458
 <212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1088)..(1088)

<223> n=a, c, g or t

<400> 65

tgaccaata agggtggaag gctgagtccc gcagagccaa taacgagagt ccgagaggcg	60
acggaggcgg actctgtgag gaaacaagaa gagaggccca agatggagac ggcggcggct	120
gtagcggcgt gacaggagcc ccatggcacc tgcccagccc cacctcagcc catcttgaca	180
aaatctaagg ctccatggag ccaccacggg gccccctgc caatggggcc gagccatccc	240
gggcagtggg caccgtcaaa gtatacctgc ccaacaagca acgcacggtg gtgactgtcc	300
gggatggcat gagtgtctac gactctctag acaaggccct gaaggtgagg ggtctaaatc	360
aggactgctg tgtgggtctac cgactcatca agggacgaaa gacggtcact gcctgggaca	420
cagccattgc tcccctggat ggcgaggagc tcattgtcga ggtccttgaa gatgtccgc	480
tgaccatgca caattttgta cggaagacct tcttcagcct ggcgttctgt gacttctgcc	540
ttaagtttct gttccatggc ttccgttgcc aaacctgtgg ctacaagttc caccagcatt	600
gttctctcaa ggtccccaca gtctgtgttg acatgagtac caaccgcaa cagttctacc	660
acagtgtcca ggatttgtcc ggaggctcca gacagcatga ggctccctcg aaccgcccc	720
tgaatgagtt gctaaccccc cagggtccca gccccgcac ccagcactgt gaccgggagc	780
acttccccct cctgccccca gccaatgccc ccctacagcg catccgctcc acgtccactc	840
ccaacgtcca tatggtcagc accacggccc ccatggactc caacctcatc cagctcactg	900
gccagagttt cagcactgat gctgccggta gtagaggagg tagtgatgga acccccggg	960
ggagccccag cccagccagc gtgtcctcgg ggaggaagtc cccacattcc aagtcaccag	1020
cagagcagcg cgagcggaag tccttgggcg atgacaagaa gaaagtgaag aacctggggt	1080
accgggantc aggctattac tgggaggtac caccagtgga ggtgcagctg ctgaagagga	1140
tcgggacggg ctcgtttggc accgtgtttc gagggcggtg gcatggcgat gtggccgtga	1200
agggtgctcaa ggtgtcccag cccacagctg agcaggccca ggctttcaag aatgagatgc	1260
agggtgctcag gaagacgca catgtcaaca tcttgctggt tatgggcttc atgaccggc	1320
cgggatttgc catcatcaca cagtgggtgtg agggctccag cctctaccat cacctgcatg	1380
tggccgacac acgcttcgac atgggtccagc tcategacgt ggcccggcag actgcccagg	1440

gcatggacta cctccatgcc aagaacatca tccaccgaga tctcaagtct aacaacatct 1500
 tcctacatga ggggctcacg gtgaagatcg gtgacttttg cttggccaca gtgaagactc 1560
 gatggagcgg ggcccagccc ttggagcagc cctcaggatc tgtgctgtgg atggcagctg 1620
 aggtgatccg tatgcaggac ccgaaccctt acagcttcca gtcagacgtc tatgcctacg 1680
 gggttgtgct ctacgagctt atgactgggt cactgcctta cagccacatt ggctgccgtg 1740
 accagattat ctttatggtg ggccgtgggt atctgtcccc ggacctcagc aaaatctcca 1800
 gcaactgccc caaggccatg cggcgccctgc tgtctgactg cctcaagttc cagcgggagg 1860
 agcggccccct cttccccagc atcctggcca caattgagct gctgcaacgg tcaactccca 1920
 agattgagcg gagtgcctcg gaaccctcct tgcaccgcac ccaggccgat gaggttgcctg 1980
 cctgcctact cagcgcagcc cgccttgtgc cttaggcccc gcccaagcca ccaggagacc 2040
 aatctcagcc ctccacgcca aggagccttg cccaccagcc aatcaatgtt cgtctctgcc 2100
 ctgatgctgc ctcaggatcc cccattcccc accctgggag atgagggggg ccccatgtgc 2160
 ttttccagtt cttctggaat tgggggaccc ccgccaaaga ctgagcccc tgtctctcc 2220
 atcatttggg ttctcttggg ctttggggat acttctaaat tttgggagct cctccatctc 2280
 caatggctgg gatttgtggc agggattcca ctcagaacct ctctggaatt tgtgcctgat 2340
 gtgccttcca ctggattttg gggttcccag caccocatgt ggattttggg gggtcctttt 2400
 tgtgtctccc ccgccattca aggactcttc tctttcttca ccaagaagca cagaattc 2458

<210> 66
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 66
 ccacaccact catctcatct 20

<210> 67
 <211> 2510
 <212> DNA
 <213> Homo sapiens

<400> 67
 agcctcccgg cccctcccc gcccgacagc ggccgctcgg gcccggctc tcggttataa 60

gatggcggcg	ctgagcgggtg	gcggtggtgg	cggcgcgagg	ccgggccagg	ctctgttcaa	120
cggggacatg	gagcccggag	ccggcgccgg	ccggcccgcg	gcctcttcgg	ctgcggaccc	180
tgccattccg	gaggaggtgt	ggaatatcaa	acaaatgatt	aagttgacac	aggaacatat	240
agaggcccta	ttggacaaat	ttggtgggga	gcataatcca	ccatcaatat	atctggaggc	300
ctatgaagaa	tacaccagca	agctagatgc	actccaacaa	agagaacaac	agttattgga	360
atctctgggg	aacggaactg	atctttctgt	ttctagctct	gcatcaatgg	ataccgttac	420
atcttcttcc	tcttctagcc	tttcagtgt	accttcacat	ctttcagttt	ttcaaaatcc	480
cacagatgtg	gcacggagca	accccaagtc	accacaaaaa	cctatcgta	gagtcttcct	540
gcccacaaaa	cagaggacag	tggtacctgc	aagggtgtgga	gttacagtcc	gagacagtct	600
aaagaaagca	ctgatgatga	gaggtctaata	cccagagtgc	tgtgctgttt	acagaattca	660
ggatggagag	aagaaaccaa	ttggttggga	cactgatatt	tcttggctta	ctggagaaga	720
attgcatgtg	gaagtgttgg	agaatgttcc	acttacaaca	cacaactttg	tacgaaaaac	780
gtttttcacc	ttagcatttt	gtgacttttg	tcgaaagctg	cttttccagg	gtttccgctg	840
tcaaacatgt	ggttataaat	ttcaccagcg	ttgtagtaca	gaagttccac	tgatgtgtgt	900
taattatgac	caacttgatt	tgctgtttgt	ctccaagtgc	tttgaacacc	accaatacc	960
acaggaagag	gcgtccttag	cagagactgc	cctaacatct	ggatcatccc	cttccgcacc	1020
cgcctcggac	tctattgggc	cccaaattct	caccagtccg	tctccttcaa	aatccattcc	1080
aattccacag	cccttccgac	cagcagatga	agatcatcga	aatcaatttg	ggcaacgaga	1140
ccgatcctca	tcagctccca	atgtgcatat	aaacacaata	gaacctgtca	atattgatga	1200
cttgattaga	gaccaaggat	ttcgtggtga	tggaggatca	accacagggt	tgtctgctac	1260
ccccctgcc	tcattacctg	gctcactaac	taacgtgaaa	gccttacaga	aatctccagg	1320
acctcagcga	gaaaggaagt	catcttcac	ctcagaagac	aggaatcgaa	tgaaaacact	1380
tggtagacgg	gactcgagtg	atgattggga	gattcctgat	gggcagatta	cagtgggaca	1440
aagaattgga	tctggatcat	ttggaacagt	ctacaaggga	aagtggcatg	gtgatgtggc	1500
agtgaaaatg	ttgaatgtga	cagcacctac	acctcagcag	ttacaagcct	tcaaaaatga	1560
agtaggagta	ctcaggaaaa	cacgacatgt	gaatataccta	ctcttcacatg	gctattccac	1620
aaagccacaa	ctggctattg	ttaccagtg	gtgtgagggc	tccagcttgt	atcaccatct	1680
ccatatcatt	gagaccaa	ttgagatgat	caaacttata	gatattgcac	gacagactgc	1740

```

acagggcatg gattacttac acgccaagtc aatcatccac agagacctca agagtaataa 1800
tatatttctt catgaagacc tcacagtaaa aataggtgat tttggtctag ctacagtga 1860
atctcgatgg agtgggtccc atcagtttga acagttgtct ggatccattt tgtggatggc 1920
accagaagtc atcagaatgc aagataaaaa tccatacagc tttcagtcag atgtatatgc 1980
atttgggatt gttctgtatg aattgatgac tggacagtta ccttattcaa acatcaacaa 2040
cagggaccag ataattttta tgggtgggacg aggatacctg tctccagatc tcagtaaggt 2100
acggagtaac tgtccaaaag ccatgaagag attaatggca gagtgcctca aaaagaaaag 2160
agatgagaga ccactctttc cccaaattct cgctctatt gagctgctgg cccgctcatt 2220
gccaaaaatt caccgcagtg catcagaacc ctccttgaat cgggctgggt tccaaacaga 2280
ggatttttagt ctatatgctt gtgcttctcc aaaaacaccc atccaggcag ggggatatgg 2340
tgcgtttcct gtccactgaa acaaatgagt gagagagttc aggagagtag caacaaaagg 2400
aaaataaatg aacatatggt tgcttatatg ttaaattgaa taaaatactc tctttttttt 2460
taaggtggaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaccc 2510

```

```

<210> 68
<211> 20
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Synthetic

```

```

<400> 68
attttgaagg agacggactg 20

```

```

<210> 69
<211> 20
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Synthetic

```

```

<400> 69
tggattttga aggagacgga 20

```

```

<210> 70
<211> 20
<212> DNA
<213> Artificial Sequence

```

<220>
 <223> Synthetic

 <400> 70
 cgtttagttag tgagccaggt 20

 <210> 71
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 71
 atttctgtaa ggctttcacg 20

 <210> 72
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 72
 cccgtctacc aagtgttttc 20

 <210> 73
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 73
 aatctcccaa tcatcactcg 20

 <210> 74
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 74
 tgctgaggtg taggtgctgt 20

 <210> 75

<211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 75
 tgtaactgct gaggtgtagg

20

<210> 76
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 76
 tgtcgtgttt tcctgagtac

20

<210> 77
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 77
 agttgtggct ttgtggaata

20

<210> 78
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 78
 atggagatgg tgatacaagc

20

<210> 79
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 79

ggatgattga cttggcgtgt

20

<210> 80
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 80
 aggtctctgt ggatgattga

20

<210> 81
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 81
 attctgatga cttctggtgc

20

<210> 82
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 82
 gctgtatgga tttttatctt

20

<210> 83
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 83
 tacagaacaa tcccaaattgc

20

<210> 84
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic

<400> 84
atcctcgtcc caccataaaa 20

<210> 85
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85
ctctcatctc ttttcttttt 20

<210> 86
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 86
gtctctcatc tcttttcttt 20

<210> 87
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87
ccgattcaag gagggttctg 20

<210> 88
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 88
tggatgggtg tttttggaga 20

<210> 89

<211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 89
 ctgcctggat ggggtgttttt

20

<210> 90
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 90
 ggacaggaaa cgcaccatat

20

<210> 91
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 91
 ctcatttggt tcagtggaca

20

<210> 92
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 92
 tctctcactc atttgtttca

20

<210> 93
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 93

actctctcac tcatttggtt

20

<210> 94
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 94
 gaactctctc actcatttgt

20

<210> 95
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 95
 tcctgaactc tctcactcat

20

<210> 96
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 96
 ttgctactct cctgaactct

20

<210> 97
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 97
 tttgttgcta ctctcctgag

20

<210> 98
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

 <400> 98
 cttttgttgc tactctcctg 20

 <210> 99
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 99
 gctactctcc tgaactctct 20

 <210> 100
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 100
 ttccttttgt tgctactctc 20

 <210> 101
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 101
 atttattttc cttttgttgc 20

 <210> 102
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic

 <400> 102
 atatgttcat ttattttcct 20

 <210> 103

<211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 103
 tttattttcc ttttggtgct

20

<210> 104
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 104
 tgttcattta ttttcctttt

20

<210> 105
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 105
 atttaacata taagcaaaca

20

<210> 106
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 106
 ctgcctggta ccctgttttt

20

<210> 107
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic

<400> 107

29

ctgcctggaa ggggtgttttt

20

<210> 108

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Synthetic

<400> 108

ctgcctggta cgggtgttttt

20